

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-14 (canceled).

Please add the following new claims:

15. (new): A method for mounting a seal in a fuel cell, the method comprising:
forming a membrane electrode assembly by holding an electrolyte membrane between a first electrode and a second electrode; and
preforming the seal into a frame;
inserting the membrane electrode assembly into the frame;
wherein the seal contacts an exposed planar surface of the membrane and the seal abuts a side or end portion of each electrode and abuts a side or end portion of the membrane at an exposed lateral surface of the membrane and at an exposed lateral surface of each electrode; and
the seal and the membrane electrode assembly are integrally bonded.

16. (new): A method for mounting a seal in a fuel cell, the method comprising:
forming a membrane electrode assembly by holding an electrolyte membrane between a first electrode and a second electrode; and
preforming the seal into a frame;
wherein a hot pressing die having a first die and a second die is used;
the first electrode is set in the first die;

wherein an adhesive is applied to the seal at an exposed planar portion of the seal corresponding to an exposed planar surface of the electrolyte membrane and the seal abuts a side or end portion of each electrode and abuts a side or end portion of the membrane at an exposed lateral surface of the membrane and at an exposed lateral surface of each electrode;

the electrolyte membrane is layered on the adhesive coated on the seal and layered on the first electrode;

the second electrode is layered on the electrolyte membrane; and

the first and second electrodes, the electrolyte membrane and the seal are brought into intimate contact by holding them with the first and second dies, and they are integrally bonded by hot pressing.

17. (new):A method for mounting a seal in a fuel cell, the method comprising:

forming a membrane electrode assembly by holding an electrolyte membrane between a first electrode and a second electrode; and

wherein a hot pressing die having a first die and a second die is used;

the first electrode is set in the first die;

the seal is preformed into a frame in a condition in which a reinforcement member is inserted into the seal and the reinforcement member laterally abuts a lateral surface of one of the electrodes and abuts an exposed planar surface of the electrolyte membrane or the reinforcement member abuts an exposed planar surface of the electrolyte membrane and extends into the first electrode adjacent the exposed planar surface of the electrolyte membrane;

the electrolyte membrane is layered on the first electrode such that the reinforcement member is held between an exposed planar surface of the first electrode and an exposed planar surface of the electrolyte membrane;

the second electrode is layered on the electrolyte membrane; and

the first and second electrodes, the electrolyte membrane, the seal and the reinforcement member are brought into intimate contact by holding them with the first and second dies, and they are integrally bonded by hot pressing.

18. (new): A method for mounting a seal in a fuel cell, the method comprising:

forming a membrane electrode assembly by holding an electrolyte membrane between a first electrode and a second electrode; and

wherein a hot pressing die having a first die and a second die is used;

the first electrode is set in the first die;

the seal is preformed into a frame;

wherein the seal is layered on a portion of the first electrode in the first die in a condition in which part of an exposed planar portion of the seal overlaps with an exposed planar portion of the first electrode and an exposed lateral surface of the seal abuts an exposed lateral surface of the first electrode;

the electrolyte membrane is layered on the first electrode in a condition in which a second exposed planar portion of the seal is held between the exposed planar portion of the first electrode and an exposed planar portion of the electrolyte membrane;

the second electrode is layered on the electrolyte membrane; and

lateral surfaces of the first and second electrodes and a lateral surface of the electrolyte membrane abut the lateral exposed planar portion of the seal; and

the first and second electrodes, the electrolyte membrane and the seal are brought into intimate contact by holding them with the first and second dies, and they are integrally bonded by hot pressing.

19. (new): A method for mounting a seal in a fuel cell, the method comprising:

forming a membrane electrode assembly by holding an electrolyte membrane between a first electrode and a second electrode such that there is an exposed lateral surface of each of the first electrode, the electrolyte membrane and the second electrode, the electrolyte membrane also having an exposed planar surface; and

preforming the seal into a frame;

wherein a hot pressing die having a first die and a second die is used; and

wherein an adhesive is applied to an exposed planar portion of the seal corresponding to an exposed planar surface of the electrolyte membrane and the seal will abut a side or end portion of each electrode and a side or end portion of the electrolyte membrane at an exposed lateral surface of the membrane and at an exposed lateral surface of each electrode;

setting the seal in the first die;

setting the membrane electrode assembly in the first die in a condition in which the exposed planar portion of the electrolyte membrane contacts the adhesive coating on the seal and further wherein the exposed lateral surface of each of the first electrode, the second electrode and the electrolyte membrane contact an exposed lateral portion of the seal; and

the seal and the membrane electrode assembly are brought into intimate contact by holding them with the first and second dies, and the seal and the membrane electrode assembly are integrally bonded by hot pressing.

20. (new): A method for mounting a seal in a fuel cell according to claim 16, wherein a reinforcement member is inserted into the seal in a condition in which a planar portion thereof is exposed, and an adhesive is coated on the exposed planar portion of the reinforcement member.

21. (new): A method for mounting a seal in a fuel cell according to claim 16, wherein a reinforcement member is inserted into the seal, and an adhesive is coated on an exposed planar portion of the seal.

22. (new): A method for mounting a seal in a fuel cell according to claim 15, wherein the seal is formed from materials of the elastomer type which require heating for vulcanizing or hardening, or materials of the thermoplastic elastomer type which do not require heating.

23. (new): A method for mounting a seal in a fuel cell according to claim 15, wherein the seal is formed from liquid materials of the cold setting type or the thermosetting type.

24. (new): A method for mounting a seal in a fuel cell according to claim 17, wherein the reinforcement member is a sheet formed from a resin or a metal, or a wire made from a resin or a metal.

25. (new): A fuel cell formed by layering plural membrane electrode assemblies via a separator plate respectively, wherein the membrane electrode assembly is mounted with a seal by a method for mounting a seal in a fuel cell according to one of claims 15 to 24.

26. (new): A method for mounting a seal in a fuel cell according to one of claims 15 to 24, wherein the seal includes an outer linear protrusion and an inner linear protrusion disposed inside thereof;

the outer linear protrusion contacts adjacent upper and lower seals of adjacent upper and lower fuel cell units when fuel cell units are assembled to a fuel cell stack;

the inner linear protrusion is provided at an upper side or a lower side of the seal; and

the inner linear protrusion contacts the second electrode of the adjacent fuel cell unit.

27. (new): A method for mounting a seal in a fuel cell according to one of claims 15 to 24, wherein the second electrode has larger planar area than that of the first electrode, and has a lateral portion extending to the seal which abuts a lateral portion of the seal.

28. (new): A method for mounting a seal in a fuel cell according to claim 25, wherein the second electrode has larger planar area than that of the first electrode, and has a lateral portion extending to the seal which abuts a lateral portion of the seal.